

Amendments to the Claims

The following listing of claims replaces all prior versions of the claims and all prior listings of the claims in the present application.

Claims 1-23 (canceled)

Claim 24. (Currently amended) An apparatus for manufacturing a reinforcing structure for tyres of vehicles, comprising:

a feeding device for feeding a plurality of strip segments, each strip segment comprising substantially parallel filiform elements at least partially coated by at least one layer of elastomeric material;

a laying unit for applying the plurality of strip segments onto a toroidal support according to a preset laying angle relative to a circumference of the toroidal support;

first angular actuation devices to cause a relative motion between the laying unit and the toroidal support about a geometric axis of the toroidal support; and

second angular actuation devices capable of being activated during the applying step to cause, between each strip segment and the toroidal support, a relative rotation about an axis of correction substantially radial to the geometric axis of rotation,

wherein an amount of said rotation is calculated based on a geometry of the toroidal support.

Claim 25. (Currently amended) The apparatus of claim 24, wherein the second angular actuation ~~devices are~~ device is operatively interpolated with the laying unit to cause the plurality of strip segments to be applied according to a substantially orthodromic trajectory relative to ~~[[an]]~~ the exterior surface of the toroidal support.

Claim 26. (Currently amended) The apparatus of claim 24, wherein the second angular actuation ~~devices are~~ device is mechanically connected to the toroidal support to rotate the toroidal support angularly about the axis of correction.

Claim 27. (Previously presented) The apparatus of claim 24, wherein the axis of correction lies substantially in an equatorial plane of the toroidal support.

Claim 28. (Previously presented) The apparatus of claim 24, wherein the feeding device comprises:

a cutting device operating on a continuous strip element to obtain the plurality of strip segments therefrom; and

a gripping device movable between a first operative position, wherein the gripping device engages a terminal end of the continuous strip element in proximity to the cutting device, and a second operative position, wherein the gripping device is removed from the cutting device to extend the continuous strip element beyond the cutting device a distance corresponding to a length of at least one of the plurality of strip segments.

Claim 29. (Currently amended) The apparatus of claim 24, wherein the laying unit comprises at least one presser element movable against ~~[[an]]~~ the exterior surface of the toroidal support to cause the applying of the strip segments.

Claim 30. (Currently amended) The apparatus of claim 29, wherein the laying unit comprises:

- at least two presser elements supported by respective support elements;
- a guide structure bearing the support elements;
- a radial actuation ~~devices~~ device for translating the at least two presser elements in radial movement to the exterior surface of the toroidal support; and
- a transverse actuation ~~devices~~ device for translating the at least two presser elements between a first operative condition, wherein the at least two presser elements are moved together, and a second operative condition, wherein the at least two presser elements are removed relative to an equatorial plane of the toroidal support.

Claim 31. (Currently amended) The apparatus of claim 30, further comprising auxiliary holding elements for holding the strip segments cut off by ~~[[the]]~~ a cutting device.

Claim 32. (Previously presented) The apparatus of claim 31, wherein the auxiliary holding elements are movable relative to the at least two presser elements in a direction substantially radial to the toroidal support.

Claim 33 (New) An apparatus for manufacturing a reinforcing structure for tyres of vehicles, comprising:

a feeding device for feeding a plurality of strip segments, each strip segment comprising substantially parallel filiform elements at least partially coated by at least one layer of elastomeric material;

a laying unit for applying the plurality of strip segments onto a toroidal support according to a preset laying angle relative to a circumference of the toroidal support;

first angular actuation devices to cause a relative motion between the laying unit and the toroidal support about a geometric axis of the toroidal support; and

second angular actuation devices capable of being activated during the applying step to cause, between each strip segment and the toroidal support, a relative angular rotation about an axis of correction substantially radial to the geometric axis of rotation,

wherein an amount of said relative angular rotation occurs between the toroidal support and each strip segment after a central portion of each strip segment has been brought in contact against the toroidal support.

Claim 34. (New) The apparatus of claim 33, wherein the second angular actuation device is operatively interpolated with the laying unit to cause the plurality of

strip segments to be applied according to a substantially orthodromic trajectory relative to the exterior surface of the toroidal support.

Claim 35. (New) The apparatus of claim 33, wherein the second angular actuation device is mechanically connected to the toroidal support to rotate the toroidal support angularly about the axis of correction.

Claim 36. (New) The apparatus of claim 33, wherein the axis of correction lies substantially in an equatorial plane of the toroidal support.

Claim 37. (New) The apparatus of claim 33, wherein the feeding device comprises:

a cutting device operating on a continuous strip element to obtain the plurality of strip segments therefrom; and

a gripping device movable between a first operative position, wherein the gripping device engages a terminal end of the continuous strip element in proximity to the cutting device, and a second operative position, wherein the gripping device is removed from the cutting device to extend the continuous strip element beyond the cutting device a distance corresponding to a length of at least one of the plurality of strip segments.

Claim 38. (New) The apparatus of claim 33, wherein the laying unit comprises at least one presser element movable against the exterior surface of the toroidal support to cause the applying of the strip segments.

Claim 39. (New) The apparatus of claim 38, wherein the laying unit comprises:
at least two presser elements supported by respective support elements;
a guide structure bearing the support elements;
a radial actuation device for translating the at least two presser elements in radial movement to the exterior surface of the toroidal support; and
a transverse actuation device for translating the at least two presser elements between a first operative condition, wherein the at least two presser elements are moved together, and a second operative condition, wherein the at least two presser elements are removed relative to an equatorial plane of the toroidal support.

Claim 40. (New) The apparatus of claim 39, further comprising auxiliary holding elements for holding the strip segments cut off by a cutting device.

Claim 41. (New) The apparatus of claim 40, wherein the auxiliary holding elements are movable relative to the at least two presser elements in a direction substantially radial to the toroidal support.